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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,207	01/15/2002	Hong Wan	P01,0367	5757

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HONEYWELL INTERNATIONAL INC.  
101 COLUMBIA ROAD  
P O BOX 2245  
MORRISTOWN, NJ 07962-2245

EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/047,207

Applicant(s)

WAN, HONG

Examiner

Karl D Easthom

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-- *AW*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 18-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 31-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The finality of the previous office action is hereby removed due to the new grounds of rejection.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 11-12, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Torok et al. Torok discloses the claimed invention at Figs. 3a or 5, with first and second isolator input terminals 306, 308, or 510, first and second isolator output terminals 310, 312, or at V, first through fourth magnetoresistors 302, or 502-508, and wherein the resistors are each coupled to the claimed terminals, with supply B having two terminals, and an input strap 304 or 510 producing magnetic fields in opposite directions in two of the magnetoresistors as simple application of the right-hand rule shows, meeting claim 2. That is, a DC current entering at 510 would produce an upwards magnetic field at the top two magnetoresistors, and a downwards field for that below. In claims 3 and 12, the plurality is seen. In claims 4-5, some elongated portions at Fig. 5 of the magnetoresistors are from left to right, since elongated does not require that portion be the longest portion of the magnetoresistors. In claims 6 and 13, the input strap is in two different layers, each of which are different than the layer of the magnetoresistors. In claim 11, the strap is alongside four magnetoresistors in two different directions, where the sides are the top and bottom sides, and the current flows in opposite directions. In claim 31, the resistance in each changes so that there is tracking. In claims 32-33, the turns at the end run along a length where a length is the longest part, and run along a length at least at the ends.

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4. Claims 1-17 and 32-35 are rejected under 35 U.S.C. 102(b) as anticipated by Wan. Wan discloses the claimed invention at Fig. 1 where the input strap is 54, and the magnetoresistors are 24-30. The supply terminals and isolator outputs are the terminals of the bridge of magnetoresistors. That is, while the input strap 54 is described as a reset strap, it still meets the claim since it can function as an input strap as it is isolated, and also produces fields in 28, 30 opposite from that of 24, 26. The elongated portions of claims 4-5 are at the top and bottom of Fig. 2. In claims 9-10, 16-17, and 34-35, the reset coil is the coil 72, 74 having the portions claimed. In claims 11 and 32-33, the first and second portions are the portions under the different magnetoresistors. They run along a length where a length is any finite portion. Or the portions of the coil 54 to the left and right of the magnetoresistors at Fig. 1 run along the length of those resistors if the length is taken to be the longest portions thereof. For claim 11, the two portions of at least one turn have current opposite in the different resistors 24 and 28, for example. Finally note that Fig. 1 of Wan is remarkably similar to Fig. 4 of applicant's specification. It appears that there are some structural differences between the input strap 54 of Wan and 70 of applicant, but applicant has the burden to explain the difference in terms of how the claims are not met by the input strap 54 of Wan. For claim 31, "tracks" is a broad term, and the resistors each change to a maximum value when a pulse occurs due to the fields generated in the input coil so that there is a tracking. Since the setup is the same as that of applicant, there would appear to be tracking via a DC current also due to the vector sum of fields appearing. If this were not so, a pulse would not be required for setting/resetting.

5. Claims 1-5, 11-15, 31-33 are rejected under 35 U.S.C. 102(b) as anticipated by Pant '590. Pant discloses the claimed invention at Figs. 3a, 3b, and 3c where the input strap is 134,

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and the magnetoresistors are 120-123. The supply terminals and isolator outputs are the terminals of the bridge of magnetoresistors. The input strap 134 is as an input strap as it is isolated from the outputs of the magnetoresistors, and changes the transfer function and resistance of the resistors as noted at col. 3 so that the isolated output varies if a current is supplied, meeting claims 2 and 31. In claims 1-2 the fields are opposite as claimed, where "across" is a broad term. For claim 3, Fig. 5 discloses the strap under the magnetoresistors R1-R4. For claims 4-5 and 32-33, the elongated portions of the strap are near terminals S. In claims 6-8, and 12-15 see the dielectrics of SiN at Fig. 3c

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-10, 14-17, and 34-35 are rejected under 35 U.S.C. 103(a) as obvious over Torok et al. in view of Wan. Torok discloses the invention as noted above except for the dielectric and reset/straps. Wan discloses at col.1, lines 30-60, and Fig. 1 a set/reset strap 54, that is essential in order for repeatability, and also for testing, setup, calibration, and compensation, meeting the claims, for magnetoresistors such as that of Torok at Fig. 5, so that it would have been obvious to employ the straps. Wan discloses dielectric layers 102, 104, and 106 at Fig. 1a for the purpose of providing small devices at col. 1 so that it would have been obvious to form such layers, where col. 4, lines 35-50 discloses varying relative locations of the layers so that such a variation employed with Torok would have been obvious.

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8. Claims 7-8, 10, 17, 14-15, and 34-35 are rejected under 35 U.S.C. 103(a) as obvious over Torok et al. in view of Pant. '278. Torok discloses the invention as noted above except for the dielectric and set/reset strap.. Pant discloses at Figs.2-5 a set/reset strap and also dielectric layers, for testing, setup, calibration, and compensation, meeting the claims, for magnetoresistors such as that of Torok at Fig. 5, so that it would have been obvious to employ the straps. That is, Pant discloses at col. 1 that such testing, calibration was in the past done by coils, which would be required by the Torok device, so that it would have been obvious to employ buried coils in dielectric layers to form a compact self-contained device as stated at col. 1 (see the bottom thereof).


9. Applicant's arguments filed 11/19/03 have been considered but are moot or are persuasive only as to Lienhard.. Applicant argues that the strap 54 of Wan is not an input strap because it is a set/reset strap. This is not correct. Because the strap can function as either an input strap or a set/reset strap, it meets the claim. The set/reset is a form of an input, and input is a broad term, since the resistors see an input from the set/reset strap. Applicant argues that there is no evidence that one of skill would recognize that the set/reset strap could not be used as an input strap. Applicant states at page 30 of his brief that "the Examiner has provided no evidence (other than applicant's own disclosure) that the device disclosed in the Wan -825 patent can operate properly if the set-reset strap 54 is used as the input strap of the signal isolator". Applicant's statement is tantamount to an admission that the device will so operate. There is nothing wrong with finding proof of operability or inherency for a 102 rejection in applicant's disclosure. Applicant argues the Wan strap is not an input strap for an isolator. But this is not correct, because the claim requires only that the strap must function so that a signal there is

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isolated from a signal at the output. Thus, the strap is coupled to isolator inputs because any signal at the magnetoresistors is isolated from the coils. There is no question that some signal at the input will produce some signal at the output. This is evidenced by the '278 patent to Pant as (acknowledged by applicant as cited by Wan at col. 1) at the top col. 5, whereat there are measurements produced at the output pads 26, 30 for example as a result of inputs to the reset strap. Also, as noted above, Pant '590 reveals that the set/reset (input) straps do alter the transfer function, meeting the claim. Simply put, without a current, there is a different output than with one at the set reset/ input straps, meeting the claims. With this type of evidence of inherency as to the input function, applicant has the burden to provide evidence that structurally, the set/reset strap of Wan could not be used as the input strap as claimed. Applicant points to no structural claimed limitation that renders the set/reset strap as unable to function as an input strap as claimed. For claim 9, the other coil 70 is argued by applicant to be not a set/reset strap because the turns are along and not across the magnetoresistors. This is not correct because the coils do cross under or over the resistors, where "across" is a broad term. The coil can set or reset the magnetization in a direction 80 with a pulse. For claim 3, similarly, "across" is a broad term. For claims 4-5, applicant does not address the contention regarding the parallel portions of the coil noted at the top and bottom of the coils. For claim 31, "tracks" is a broad term, and the resistors change to a maximum value so that there is a tracking. For claims 32-33, as noted above, the length is any finite portion of the coil portions to the left and right of Fig. 1 run along the length of the longer portions of the magnetoresistors. All other arguments pertain to like elements of the different claims and response thereto will be incorporated by reference.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
KARL D. EASTHOM  
PRIMARY EXAMINER